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AMENDMENTS TO CLAIMS

1. (Currently amended) A magnetic memory cell comprising first and second magneto-resistive devices connected in series, the first magneto-resistive device having a first sense layer, the second magneto-resistive device having a second sense layer, the first and second sense layers having different coercivities and at least one of having different sizes and different material compositions.

2. (Original) The memory cell of claim 1, wherein the first and second devices are magnetic tunnel junctions.

3. (Currently amended) The memory cell of claim [2] 5, wherein the first magnetic tunnel junction includes the first sense layer and a first pinned layer; and wherein the second magnetic tunnel junction includes the second sense layer and a second pinned layer.

4. (Currently amended) The memory cell of claim [2] 5, wherein the sense layers of the first and second devices are back to back; and wherein the sense layers are separated by a layer of non-magnetic material.

5. (Currently amended) ~~The memory cell of claim 2,~~ A magnetic memory cell comprising first and second magnetic tunnel junctions connected in series, the first magnetic tunnel junction having a first sense layer, the second magnetic tunnel junction having a second sense layer, the first and second sense layers having different coercivities, wherein the first and second magnetic tunnel junctions [share] sharing a pinned layer.

6. (Currently amended) The memory cell of claim [2] 5, wherein hysteresis loops of the first and second junctions are nested.

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7. (Original) The memory cell of claim 1, wherein the sense layers in the first and second devices have different shapes.

8. (Original) The memory cell of claim 1, wherein the sense layers in the first and second devices have different sizes.

9. (Original) The memory cell of claim 1, wherein the sense layers of the first and second devices have different shapes and sizes.

10. (Original) The memory cell of claim 1, wherein the sense layers of the first and second devices have different thicknesses.

11. (Original) The memory cell of claim 1, wherein the sense layers of the first and second devices are made of different materials.

12. (Original) The memory device of claim 1, wherein the first and second devices have distinguishably different delta resistances, whereby the memory cell has at least four distinguishable logic states.

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Claims 13-22 (Cancelled)

23. (Currently amended) A method of fabricating [a] the magnetic memory [device] cell of claim 1, the method comprising:
forming a first stack of magnetic memory layers on a substrate, the first stack including [a] the first sense layer;
forming a second stack of magnetic memory layers on the first stack, the second stack including [a] the second sense layer;
the first and second sense layers being made to have different coercivities and at least one of different sizes and different material compositions.

24. (Withdrawn) The method of claim 23, wherein the second stack is deposited on the first stacks; the first and second stacks are patterned into bits having a first shape; and at least the sense layer of the second stack is re-patterned into a different second shape.

25. (Cancelled)